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LUMINARY Memo #195

To: Distribution
From: D. Densmore
Date: 11 January 1971
Subject: Luminary Revision 200

The following changes were incorporated into Luminary Revision 200:
fixes to Anomaly L-1D-17, L-1D-18, PCR 324, PCR 1044, ACB L-46
and Anomaly 1-1D-12.

1) L-1D-17 (A flashing V37 to terminate P22 may not occur).

A flag bit (FSPASFLG) was shared between RR predesignate routine
of R21 (called by P22) and V16N54 display computations of P22. It
was thought that there would be no interaction between these flag
users. One routine finishes before the other begins. However if
after the second has run it goes back to repeat the whole sequence
without proper flag initialization, the V16N54 computation will
erroneously think it already called the display.

a) A new flag, FRSTIME (Bit 4 of flagword 1), was defined to flag
the first time in the preposition loop that the LGC finds the
projected CM position within the limits. (It goes through the
loop once more after that to allow a little leeway.) The flag
definition was made and a reference put in the alphabetic flag
table.

b) Former references to FSPASFLG within the predesignate
routine were changed to use FRSTIME.

2) L-1D-18 (Fix P22 to prevent RR antenna oscillations).

The designate flag in RADMODES was cleared at R21LEM4 when
R21 finds the CM is out of range. When the bit was left set T4
would find the antenna outside the limits and move it back to the
middle; however, since the bit was left set it would be driven out
again, and so on, resulting in oscillations.

3) PCR 324 (RR PGNCS to AGS downlink).

A restart problem was fixed in the AGS downlist initialization by moving the restart point from after the RR data is stored down to after AGSCODE is set. A new erasable was defined in E7 — equated to RRTRUN – to store AGSCODE in for the restart protected. It was called AGSCDTMP.

4) PCR 1044 (Redesign R53-R57).

An error in the ROD coding in MARKRUPT (using a CCS instead of a BZMF) resulted in going to subroutine DESCBITS with the channel 16 ROD bits in A decremented. DESCBITS checks bit 7. "A" will now always indicate that bit 7 is off. Thus RODCOUNT will always be incremented by 1 whether it was a + or - ROD input. This error was corrected by testing bits 6 and 7 of Channel 16 (NAVKEYIN) with a BZMF.

5) ACB L-46 (Delete superfluous INHINT).

An INHINT before a WAITLIST call in AOTMARK was deleted. It is unnecessary since WAITLIST does an INHINT as its first instruction. This change was needed to make room in Bank 7 for the implementation of PCR 1044.

6) Anomaly L-1D-12 (V41 doesn't work).

V41 was fixed to check for RR reposition or remode and wait until that process is complete. Formerly it did not stop the remode or reposition task by disabling the error counters (see Luminary Memo #175, item 12.b), but it didn't wait for it to be completed either. As a consequence there was possible conflict between that and the coarse align.

GSOP Impact

The following items should be examined for possible GSOP impact:

Section 2   Items 1, 2, 6
Section 4   Items 1, 2, 6